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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/761,778

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Yoshinobu Kubota

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EXAMINER

KAO, CHIH CHENG G

ART UNIT PAPER NUMBER

2882

DATE MAILED: 07/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/761,778

Applicant(s)

KUBOTA ET AL.

Examiner

Chih-Cheng Glen Kao

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☒ Claim(s) 6 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "11" and "12" in Fig. 1 has been used twice. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Fig. 1, "1a", "2a", "21", "22", "b1", "b2", "ba"

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Page 7, line 27, "33"

Page 7, line 29, "34"

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

4. Claim 8 is objected to because of the following informalities. In line 3, "said first Mach-Zehnder optical modulating part" is recited. There is insufficient antecedent basis for this limitation in the claim. This objection may be obviated by deleting changing the dependency of claim 8 from claim 7 to claim 6. For purposes of examination, the claim has been treated as such. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al (US Patent 5117470). Inoue et al. discloses an optical circuit (Title) comprising:

a substrate (Fig. 32, #9) with a plurality of Mach-Zehnder interferometer type optical element (Fig. 32, #70a, 70b, 70c),

a first (Fig. 32, #62) and second (Fig. 32, #61) waveguide,

wherein at least two optical elements are connected in tandem (Fig. 32, #70a and 70b).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. as applied to claim 1 above, and further in view of House (US Patent 6298177). Inoue et al. discloses a device as recited above. However, Inoue et al. does not seem to specifically disclose the Mach-Zehnder as an optical modulator.

House teaches the Mach-Zehnder as an optical modulator (col. 5, lines 25-30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the modulator of House with the device of Inoue et al., since one, based on engineering efficiency, may be motivated to build a switch to cost effectively use the same system to send information from one location to a plurality of destinations as shown by House (col. 5, lines 25-30, and Fig. 4).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. as applied to claim 1 above, and further in view of Asano et al. (US Patent 5621839). Inoue et al. discloses a device as recited above. However, Inoue et al. does not seem to specifically disclose a ferroelectric substrate.

Asano et al. teaches a ferroelectric substrate (Title).

Art Unit: 2882 .

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the ferroelectric substrate of Asano et al. with the device of Inoue et al., since one would be motivated to build a device in which a light dividing ratio and a light insertion loss are not varied as shown by Asano et al. (col. 2, lines 9-16) for stronger signals.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. as applied to claim 1 above, and further in view of Hosoi (US Patent 5475771). Inoue et al. discloses a device as recited above. However, Inoue et al. does not seem to specifically disclose a lithium niobate substrate.

Hosoi teaches a lithium niobate substrate (col. 1, lines 11-15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the substrate of Hosoi with the device of Inoue et al., since one would be motivated to create a large electromechanical coupling coefficient when building a device as shown by Hosoi (col. 1, lines 11-15) for stronger signals.

#### ***Allowable Subject Matter***

9. Claims 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 6, prior art does not specifically disclose or fairly suggest a second Mach-Zehnder type optical modulating part connected in tandem with said first modulating part for

Art Unit: 2882 .

applying a signal voltage according to information transmitted to said electrode, in combination with all the limitations in the claim and base claim.

*Conclusion*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk  
July 1, 2002



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